ABSTRACT

In accordance with an embodiment, the invention provides a spectral enhancement system that includes a plurality of distributed filters, a plurality of energy distribution units, and a weighted-averaging unit. At least one of the distributed filters receives a multi-frequency input signal. Each of the plurality of energy-detection units is coupled to an output of at least one filter and provides an energy-detection output signal. The weighted-averaging unit is coupled to each of the energy-detection units and provides a weighted-averaging signal to each of the filters responsive to the energy-detection output signals from each of the energy-detection units to implement distributed gain control. In an embodiment, the energy detection units are coupled to the outputs of the filters via a plurality of differentiator units.